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UNDER THE PATENT COOPERATION TREATY-CHAPTER II

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**PRELIMINARY AMENDMENT**

APPLICANT: Alexander Aschir DOCKET NO.: 112740-368  
SERIAL NO: GROUP ART UNIT:  
FILED: EXAMINER:  
INTERNATIONAL APPLICATION NO.: PCT/DE00/01659  
INTERNATIONAL FILING DATE 19 May 2000  
INVENTION: METHOD FOR ADMINISTERING SUPPLEMENTARY  
SERVICES IN TELECOMMUNICATION SYSTEMS

Assistant Commissioner for Patents,  
Washington, D.C. 20231

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Sir:

Please amend the above-identified International Application before entry  
into the National stage before the U.S. Patent and Trademark Office under 35  
U.S.C. §371 as follows:

15

**In the Specification:**

Please replace the Specification of the present application, including the  
Abstract, with the following Substitute Specification:

S P E C I F I C A T I O N

TITLE OF THE INVENTION

20

METHOD FOR ADMINISTERING SUPPLEMENTARY SERVICES IN  
TELECOMMUNICATION SYSTEMS

BACKGROUND OF THE INVENTION

25

The present invention relates to intelligent networks in the field of tele-  
communications, particularly of mobile radio, which provide the user with various  
services. Such services include, for example, a prepaid service (PPS), virtual  
private networks (VPN) or a personal number service (PNS) via which a subscriber

In addition to these primary services, the offer of performances or services (supplementary services), which are available and can be selected/deselected on a user-related basis, is increasing. Such supplementary facilities are known, for example, by the terms “blacklist” (list of subscribers whose call is, for example, unwanted and should be filtered out), “white list” (subscribers whose calls are wanted), “friends and family” (preferred subscribers, for example in connection with price discounts) or “hunting list” (sequential forwarding between a number of subscribers until one of the subscribers can be reached).

An object of the present invention consists in creating a method via which supplementary facilities in intelligent networks can be adjusted, turned off or modified (administration) relatively simply and in a subscriber-related manner.

## SUMMARY OF THE INVENTION

According to the present invention, this object is achieved by a method for administering supplementary services in telecommunication systems, in which a call from a calling subscriber station is routed to an intelligent node which runs supplementary services activated by the subscriber and possibly switches the call through to the called subscriber station and an operating menu which is transmitted to the called subscriber station, and which provides for the administration of the supplementary services with respect to the calling subscriber station is generated on the basis of the available supplementary services.

In the method according to the present invention, the respective associated intelligent node is addressed (triggered) in the case of an incoming call. This can be implemented by the intelligent node associated with the (called) subscriber identification being subsequently addressed when a call arrives at the destination exchange. Whether the node, also designated as "Service Control Point" (SCP), is responsible depends on various criteria and depends, for example, on the current location of the called subscriber station which is, in each case, determined during the routing through the network. The node, in turn, is addressed by a mobile switching center (MSC) allocated to the location of the called subscriber station; e.g., when the connection is set up by using a landline network.

In the intelligent node or in another suitable acceptance point (for example in the so-called service management point (SMP) which contains periodically updated mirrored data from the node SPC), the supplementary services currently available for the individual subscriber station and activated by the subscriber are called up and run. For example this run can have the result that the subscriber identification number of the calling subscriber station is contained in the "white list" and is thus switched through to the called subscriber station.

A key aspect of the present invention consists in that an operating menu which is transmitted to the called subscriber station is generated via the supplementary services on the basis of the data available; for example, from the intelligent node. The called subscriber can particularly advantageously administer the supplementary services with respect to the calling subscriber station or,



In this case, the subscriber can use the call for administering his/her supplementary services at a particularly early time, possibly without even having to accept the call.

Additional features and advantages of the present invention are described in, and will be apparent from, the following Detailed Description of the Invention and the Figures.

#### BRIEF DESCRIPTION OF THE FIGURES

Figure 1 diagrammatically shows the sequence of the method according to the present invention.

Figure 2 shows an example of an operating menu.

#### DETAILED DESCRIPTION OF THE INVENTION

Figure 1 shows a situation in which a call R1 of a calling subscriber station AR passes, for example, from a landline network to a mobile switching center (MSC). Depending on the protocol used (e.g., ISUP), this can occur in the form of an “initial address message” (IAM) which contains the subscriber identification number of the calling subscriber station (ClgNo.: 0303861111) and of the called subscriber station (CldNo. +4917112345). Figure 1 shows data transmissions in dot-dashed arrows whereas voice transmissions are shown in continuous arrows. The mobile switching center MSC signals the incoming call in accordance with a standardized protocol INAP as so-called “initial detection point” (IDP) to an intelligent node SPC (service control point), informing it of the subscriber identification numbers involved. In this node, the voice link to the called subscriber station AG, which is a mobile telephone, is established in a (“traditional service”) manner known per se. This link is shown as INAP operation “Connect” CON between the intelligent node SCP and the mobile switching center MSC and specifies the called subscriber identification number CldNo. The intelligent node SCP can run supplementary services ZD during the connection set-up, if available and activated by the subscriber. Such a supplementary service can be, for example, the “friends and family” or “blacklist” service described in detail initially. This presupposes that the subscriber identification number (0303861111) of the calling subscriber station AR is entered in the corresponding list of the supplementary

service. If there is an entry in the “blacklist”, the call is not switched through to the called subscriber station AG or, respectively, at least the connection set-up is not completed.

5 Taking into consideration the subscriber identification number of the calling subscriber station AR (i.e., if the respective supplementary service can be applied to the calling subscriber station), an operating menu BM or a menu page is generated on the basis of the available supplementary services ZDV; that is, the supplementary services which are provided or paid for the called subscriber station AG. Preferably, only the supplementary services which can be activated or  
10 administered at all for the current subscriber identification number of the calling subscriber station will be received in the menu.

To transmit the operating menu pages, the WAP (wireless application protocol) technology is used. In this technology, the operating menu pages are described as WML (wireless markup language) (WAP generation). WAP  
15 designates a user-friendly communication technology which is known per se and which has been developed in particular, for mobile radio telephones with Internet connection. In the telecommunication application, the WAP technology is also called WTA. The WAP page is transmitted via a WAP gateway WAPGW to the mobile switching center MSC and from there to the called subscriber station AG.  
20 This is preferably done already together with the paging message to the subscriber station AG. In fact, two traffic channels are established as already mentioned above; namely, a channel between the subscribers (voice channel) and a data channel between subscriber station AG and node SCP. These traffic channels are correlated and co-ordinated by the node SCP and the management SMP,  
25 respectively.

Figure 2 shows the representation of the WAP page on the display DP of the called subscriber station AG. The called subscriber (Mr. Mustermann) is able to recognize the subscriber identification number (call: 0303861111) of the calling subscriber station in the display DP and add the number, for example to the  
30 “blacklist” (add No. to service) via a simple menu (bar up/down) and corresponding operation of the key T (select). It is also correspondingly possible to

add the call number to the "white list" or to remove it from it again. This input for service administration is supplied via WAP technology to the node SCP which correspondingly updates the supplementary services ZD.

5 This provides the subscriber with a very elegant call-related administration option which can be exercised in a very simple manner and with few key operations via WAP/WTB technology. The content of the operating menu is advantageously presented visually to the subscriber so that the elaborate voice dialogues and extensive inputs described in the introduction are eliminated. A corresponding implementation is possible if the call originates from a mobile  
10 subscriber station ("mobile originating call" (MOC)).

Although the present invention has been described with reference to specific embodiments, those of skill in the art will recognize that changes may be made thereto without departing from the spirit and scope of the invention as set forth in the hereafter appended claims.

# 15 ABSTRACT OF THE DISCLOSURE

A method for administering supplementary services in telecommunication systems wherein a call from a calling subscriber station is routed to an intelligent node which is associated with the called subscriber station, and an operating menu in the form of a WAP page, which is transmitted to the called subscriber station and  
20 provides for the administration of the supplementary services is generated on the basis of the supplementary services available to the called subscriber station.

## **In the claims:**

On page 9, cancel line 1, and substitute the following left-hand justified heading therefor:

## 25 CLAIMS

Please cancel claims 1-3, without prejudice, and substitute the following claims therefor:

4. A method for administering supplementary services in telecommunications systems, the method comprising the steps of:

routing a call from a calling subscriber station to an intelligent node, the intelligent node running supplementary services activated by the subscriber and, potentially, switching the call through to a called subscriber station; and

generating, based on the available supplementary services, an operating  
 5 menu which is transmitted to the called subscriber station and which provides for administration of the supplementary services with respect to the calling subscriber station.

5. A method for administering supplementary services in  
 10 telecommunications systems as claimed in claim 4, wherein the operating menu is transmitted as a Wireless Application Protocol page.

6. A method for administering supplementary services in  
 telecommunications systems as claimed in claim 4, wherein the operating menu is  
 15 already transmitted during signaling of the call to the called subscriber station.

### **REMARKS**

The present amendment makes editorial changes and corrects typographical errors in the specification, which includes the Abstract, in order to conform the  
 20 specification to the requirements of United States Patent Practice. No new matter is added thereby. Attached hereto is a marked-up version of the changes made to the specification by the present amendment. The attached page is captioned  
**“Version With Markings To Show Changes Made”**.


In addition, the present amendment cancels original claims 1-3 in favor of  
 25 new claims 4-6. Claims 4-6 have been presented solely because the revisions by red-lining and underlining which would have been necessary in claims 1-3 in order to present those claims in accordance with preferred United States Patent Practice would have been too extensive, and thus would have been too burdensome. The present amendment is intended for clarification purposes only and not for  
 30 substantial reasons related to patentability pursuant to 35 U.S.C. §§101, 102, 103 or



Early consideration on the merits is respectfully requested.

Respectfully submitted,

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**VERSIONS WITH MARKINGS TO SHOW CHANGES MADE**

**In The Specification:**

The Specification of the present application, including the Abstract, has been amended as follows:

**SPECIFICATION**

**Description**

**TITLE OF THE INVENTION**

METHOD FOR ADMINISTERING SUPPLEMENTARY SERVICES IN  
TELECOMMUNICATION SYSTEMS

**BACKGROUND OF THE INVENTION**

The present invention relates to intelligent networks in the field of telecommunications, particularly of mobile radio, which provide the user with various services. Such services include, for example, a prepaid service (PPS), virtual private networks (VPN) or a personal number service (PNS) ~~by means of~~ via which a subscriber can always be reached under the same subscriber number at various stations or within various communication networks. Furthermore, it is known from WO 99/27742 that a mobile radio can be located accurately with respect to its geographic position within a network on request. The position is indicated on a display of the mobile radio in a user-selectable format. In this arrangement, the user can activate the service of locating the mobile radio via the display of the mobile radio.

In addition to these primary services, the offer of performances or services (supplementary services), which are available and can be selected/deselected on a user-related basis, is increasing. Such supplementary facilities are known, for example, by the terms "blacklist" (list of subscribers whose call is, for example, unwanted and should be filtered out), "white list" (subscribers whose calls are wanted), "friends and family" (preferred subscribers, for example in connection with price discounts) or "hunting list" (sequential forwarding between a number of subscribers until one of the subscribers can be reached).

A user-related or subscriber-related adjustment (administration) of the supplementary services (for example, adding or deleting a subscriber identification

number in one or from one of the services described above) via DTMF menus, known per se, is comparatively expensive because the subscriber demands various optional choices in voice-based dialogues and subsequent manual inputs. If, for example, the subscriber wishes to input a further call number into his/her  
 5 "blacklist" from his/her subscriber station (for example a mobile telephone), he/she would first have to dial a certain service number. It is only this which allows him the subscriber to input the respective call number manually, possibly after previous identification and authentication. This input is done as a long column of numbers/data which is repeated (announced) for confirmation. This procedure  
 10 holds a large number of error sources and is comparatively time-consuming.

The An object of the present invention consists in creating a method ~~by means of~~ via which supplementary facilities in intelligent networks can be adjusted, turned off or modified (administration) ~~by simple means~~ relatively simply and in a subscriber-related manner.

## 15 SUMMARY OF THE INVENTION

According to the present invention, this object is achieved by a method for administering supplementary services in telecommunication systems, in which a call from a calling subscriber station is routed to an intelligent node which runs supplementary services activated by the subscriber and possibly switches the call  
 20 through to the called subscriber station and an operating menu which is transmitted to the called subscriber station, and which provides for the administration of the supplementary services with respect to the calling subscriber station is generated on the basis of the available supplementary services.

In the method according to the present invention, the respective associated  
 25 intelligent node is addressed (triggered) in the case of an incoming call. This can be implemented by the intelligent node associated with the (called) subscriber identification being subsequently addressed when a call arrives at the destination exchange. Whether the node, also designated as "Service Control Point" (SCP), is responsible depends on various criteria and depends, for example, on the current  
 30 location of the called subscriber station which is, in each case, determined during the routing through the network. The node, in turn, is addressed by a mobile

switching center (MSC) allocated to the location of the called subscriber station; e.g., when the connection is set up by using a landline network.

In the intelligent node or in another suitable acceptance point (for example, in the so-called service management point (SMP) which contains periodically  
5 updated mirrored data from the node SPC), the supplementary services currently available for the individual subscriber station and activated by the subscriber are called up and run. For example, this run can have the result that the subscriber identification number of the calling subscriber station is contained in the "white list" and is thus switched through to the called subscriber station.

10 ~~An essential~~ A key aspect of the present invention consists in that an operating menu which is transmitted to the called subscriber station is generated via the supplementary services on the basis of the data available; for example, from the intelligent node. The called subscriber can particularly advantageously administer the supplementary services with respect to the calling subscriber station  
15 or, respectively, to its subscriber identification number; via this (visual) operating menu. For example, the calling subscriber station can be received in a simple manner into the supplementary service "family and friends" by the (preferably indicated) subscriber identification number of the calling subscriber station being transferred; for example, by corresponding marking or clicking on the desired  
20 supplementary service in the menu ("family and friends"). In the same manner, a supplementary service can also can be administered in order to, for example, remove a subscriber identification number from a supplementary service or to change it.

~~An essential~~ Another key aspect of the method according to the present  
25 invention is, thus, that the supplementary services available for the called subscriber station are assembled and transmitted, together with a selection option of the called subscriber station, in dependence on the subscriber identification number of the calling subscriber station with respect to this calling number by a higher-level logic. As a result, the supplementary services can be administered  
30 advantageously before, after or during the conversation with the respective calling subscriber station without the subscriber being forced to carry out elaborate

administration procedures. In particular, the elaborate calling of a corresponding service number followed by manual and/or voice-guided input of the administration requests is eliminated.

5 An advantageous embodiment of the present invention consists in that the operating menu is transmitted as a WAP (wireless application protocol) page.

The term “wireless application protocol” (WAP) designates an increasingly used technology in telecommunications ~~by means of~~ via which mobile radio stations preferably equipped, for example, with a relatively large display, communicate with the Internet. ~~An essential~~ A key aspect of the present invention  
10 consists in using this technology as a comfortable dialogue system between mobile radio station and intelligent node. The corresponding WAP page is built up by the intelligent node or an external logic (such as the “service manager point” (SMP) (SPC cluster) already mentioned).

A preferred embodiment of the method consists in that the operating menu  
15 is already transmitted during the signaling of the call to the called subscriber station.

In this case, the subscriber can use the call for administering his/her supplementary services at a particularly early time, possibly without even having to accept the call.

20 ~~In the text which follows, an exemplary embodiment of the invention will be explained in greater detail with reference to a drawing, in which:~~

Additional features and advantages of the present invention are described in, and will be apparent from, the following Detailed Description of the Invention and the Figures.

## 25 BRIEF DESCRIPTION OF THE FIGURES

Figure 1 diagrammatically shows the sequence of the method according to the present invention and.

Figure 2 shows an example of an operating menu.

## DETAILED DESCRIPTION OF THE INVENTION

30 Figure 1 shows a situation in which a call R1 of a calling subscriber station AR passes, for example, from a landline network, to a mobile switching center

(MSC). Depending on the protocol used (e.g., ISUP), this can occur in the form of an “initial address message” (IAM) which contains the subscriber identification number of the calling subscriber station (ClgNo.: 0303861111) and of the called subscriber station (CldNo. +4917112345). Figure 1 shows data transmissions in dot-dashed arrows whereas voice transmissions are shown in continuous arrows.

5 The mobile switching center MSC signals the incoming call in accordance with a standardized protocol INAP as so-called “initial detection point” (IDP) to an intelligent node SPC (service control point), informing it of the subscriber identification numbers involved. In this node, the voice link to the called

10 subscriber station AG, which is a mobile telephone, is established in a (“traditional service”) manner known per se. This link is shown as INAP operation “Connect” CON between the intelligent node SCP and the mobile switching center MSC and specifies the called subscriber identification number CldNo. The intelligent node SCP can run supplementary services ZD during the connection set-up, if available

15 and activated by the subscriber. Such a supplementary service can be, for example, the “friends and family” or “blacklist” service described in detail initially. This presupposes that the subscriber identification number (030386111) of the calling subscriber station AR is entered in the corresponding list of the supplementary service. If there is an entry in the “blacklist”, the call is not switched through to the

20 called subscriber station AG or, respectively, at least the connection set-up is not completed.

Taking into consideration the subscriber identification number of the calling subscriber station AR (i.e., if the respective supplementary service can be applied to the calling subscriber station), an operating menu BM or a menu page is

25 generated on the basis of the available supplementary services ZDV<sub>i</sub> that is, to say the supplementary services which are provided or paid for the called subscriber station AG. Preferably, only the supplementary services which can be activated or administered at all for the current subscriber identification number of the calling subscriber station will be received in the menu.

30 To transmit the operating menu pages, the WAP (wireless application protocol) technology is used. In this technology, the operating menu pages are

described as WML (wireless markup language) (WAP generation). WAP designates a user-friendly communication technology which is known per se and which has been developed in particular, for mobile radio telephones with Internet connection. In the telecommunication application, the WAP technology is also  
5 called WTA. The WAP page is transmitted via a WAP gateway WAPGW to the mobile switching center MSC and from there to the called subscriber station AG. This is preferably done already together with the paging message to the subscriber station AG. In fact, two traffic channels are established as already mentioned above; namely, a channel between the subscribers (voice channel) and a data  
10 channel between subscriber station AG and node SCP. These traffic channels are correlated and coordinated by the node SCP and the management SMP, respectively.

Figure 2 shows the representation of the WAP page on the display DP of the called subscriber station AG. The called subscriber (Mr. Mustermann) is able  
15 to recognize the subscriber identification number (call: 0303861111) of the calling subscriber station in the display DP and add the number, for example, to the "blacklist" (add No. to service) ~~by means of~~ via a simple menu (bar up/down) and corresponding operation of the key T (select). It is also correspondingly possible to add the call number to the "white list" or to remove it from it again. This input for  
20 service administration is supplied ~~by means of~~ via WAP technology to the node SCP which correspondingly updates the supplementary services ZD.

This provides the subscriber with a very elegant call-related administration option which can be exercised in a very simple manner and with few key operations ~~by means of~~ via WAP/WTa technology. The content of the operating  
25 menu is advantageously presented visually to the subscriber so that the elaborate voice dialogues and extensive inputs described in the introduction are eliminated. A corresponding implementation is possible if the call originates from a mobile subscriber station ("mobile originating call" (MOC)).

Although the present invention has been described with reference to  
30 specific embodiments, those of skill in the art will recognize that changes may be

made thereto without departing from the spirit and scope of the invention as set forth in the hereafter appended claims.



~~Abstract~~ ABSTRACT OF THE DISCLOSURE

~~Method for administering supplementary services in telecommunication systems~~

5        ~~The~~ A method for administering supplementary services in  
telecommunication systems wherein a call from a calling subscriber station (AR) is  
routed to an intelligent node (SCP) which is associated with the called subscriber  
station(AG). ~~An~~ and an operating menu (BM) in the form of a WAP page, which is  
transmitted to the called subscriber station (AG) and provides for the administration  
10 of the supplementary services is generated on the basis of the supplementary  
services (ZDV) available to the called subscriber station(AG).

FIG 1

